Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Armstrong Operating, Inc.
Well Name/Number: Toavs 1
Location: SW NE Section 33 T29N R46E
County: Roosevelt **, MT; Field (or Wildcat)** W/C

Air Quality

(possible concerns)
Long drilling time: No, 15 to 20 days drilling time.
Unusually deep drilling (high horsepower rig): No, big double derrick drilling rig or a small triple derrick drilling rig to drill to 7,600' TD.
Possible H2S gas production: Yes, possible from Mississippian Formations.
In/near Class I air quality area: Yes, Class I air quality area, Fort Peck Indian Reservation.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: If there are existing pipeline for H2S gas in the area then gas must be tied into system or if no gathering system nearby H2S gas can be flared under Board Rule 36.22.1220. Big double derrick drilling rig or a small triple derrick drilling rig to drill to 7,600' TD. No special concerns.

Water Quality

(possible concerns)
Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and oil based invert mud system on the mainhole to total depth.
High water table: None anticipated.
Surface drainage leads to live water: No, closest surface drainage is an unnamed ephemeral tributary to East Fork Wolf Creek, about 1/4 of a mile to the northwest and Wolf Creek is about ½ of a mile to the west from this location.
Water well contamination: No, closest water wells are about ¼ of a mile to the northeast, about 3/8 of a mile to the northeast, about ½ of a mile to the northwest, about 3/4 of a mile to the northwest, about 7/8 of a mile to the south and all other wells are 1 mile and further from this location. Depth of these water wells range from 40' to 60'. Surface casing setting depth of 1000'. Surface hole will be drilled with freshwater and surface casing set and cemented back to surface from 1000'.
Porous/permeable soils: No, sandy clay soils.
Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:
X Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system

__ Off-site disposal of solids/liquids (in approved facility)
__ Other: _____
Comments: 1000' of surface casing cemented to surface adequate to protect freshwater zones. _____

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None
High erosion potential: Yes, moderate cut up to 22.3' and moderate fill, up to 12.1' required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, 300'X400' location size required.
Damage to improvements: Slight
Conflict with existing land use/values: Slight, surface use appears to be grassland.

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Using existing county road, #2054. Will have to build about 1,087' of new access road into location off the existing county road. Drilling and completion fluids will be recycled to the next location the remaining fluid will be hauled to a commercial Class II disposal Cuttings will be left in the lined pit. Cuttings and lined pit will be buried after being allowed to dry. No special concerns

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Closest residences is about ½ of a mile to the west northwest from this location.
Possibility of H2S: Yes, H2S possible (Mississippian Formations).
Size of rig/length of drilling time: Big double or small triple drilling rig/moderate 15 to 20 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Proper BOP and adequate surface casing should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified._____

Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Lease Tern, Black-footed Ferret and Piping Plover. Candidate species are the Sprague's Pipit and the Greater Sage Grouse. NH Tracker website indicates no species of concern in this area.

Mitigation:

__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____

Comments: Private surface lands. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites: None identified.

Mitigation

__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other: _____

Comments: On private lands. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation

Comments: No concerns.

Remarks or Special Concerns for this site

Well is a 7,600' TD vertical Nisku Formation test in Roosevelt County.

Summary: Evaluation of Impacts and Cumulative effects

No significant long term impacts expected, some short term impacts are expected.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: February 22, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Roosevelt County water wells
(subject discussed)
February 22, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Roosevelt County, Montana
(subject discussed)
February 22, 2012

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3, Location T29N R46E
(subject discussed)

February 22, 2012
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection:_____